

1 VICINITY MAP
SCALE: N.T.S.

ACTIVITY: FILL FOR CONSTRUCTION OF TWO RETAINING WALLS, A WATERVIEW
RESIDENTIAL DEVELOPMENT AND INSTALLATION OF A BIRD OBSERVATION PLATFORM

APPLICANT: LAGUNA DEVELOPMENT GROUP, LTD.



SHINER MOSELEY AND ASSOCIATES, INC.
ENGINEERS & CONSULTANTS

555 North Carancahua Street, Suite 1650 Corpus Christi, Texas 78478

DATE: 10/14/03

DATUM: NGVD'29

CAMERON COUNTY

SMA Job No: 200.20053 SHEET 1 of 9

COE# 23330

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NOTE:

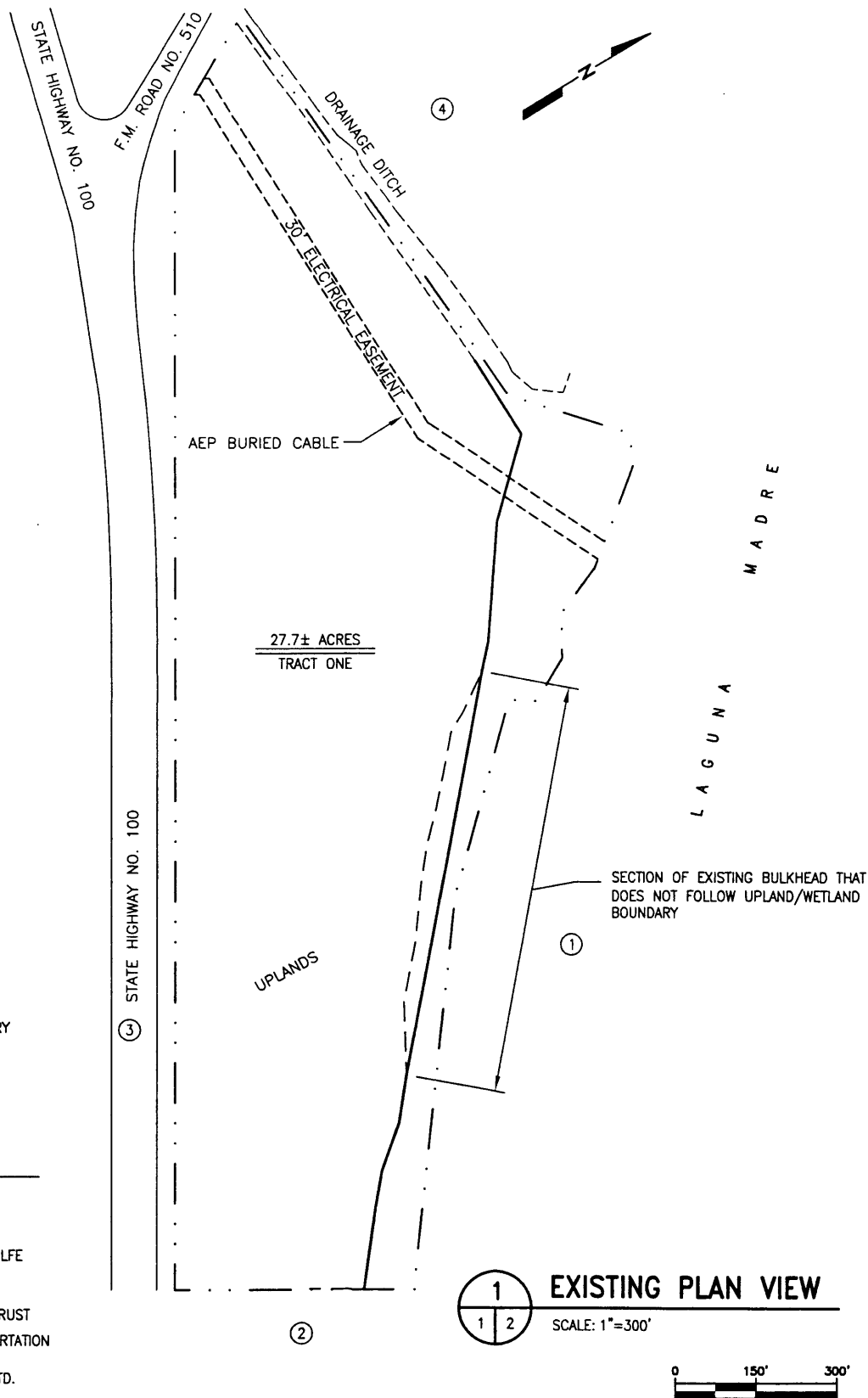
1. DRAINAGE DITCH CONTAINS MANGROVES IN CHANNEL PROFILE.
2. WITH THE EXCEPTION OF THE AREA NOTED THE EXISTING BULKHEAD FOLLOWS THE UPLAND/WETLAND BOUNDARY.

LEGEND

- · — · — PROPERTY BOUNDARY
- - - - - WETLAND BOUNDARY (6/2001)
- EXISTING BULKHEAD

ADJACENT PROPERTY OWNERS

- ① TEXAS GENERAL LAND OFFICE
- ② A. MR. FAUSTO YTURRIA, JR.
B. MRS. CASSANDRA YTURRIA WOLFE
C. MR. WILLIAM BRADLEY WOLFE
D. KIMBRO FAMILY INVESTMENTS
E. YTURRIA-SMITH INVESTMENT TRUST
- ③ TEXAS DEPARTMENT OF TRANSPORTATION
- ④ DIXIE SOUTH TEXAS HOLDINGS LTD.



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SMA Job No: 200.20053 SHEET 2 of 9

COE# 23330

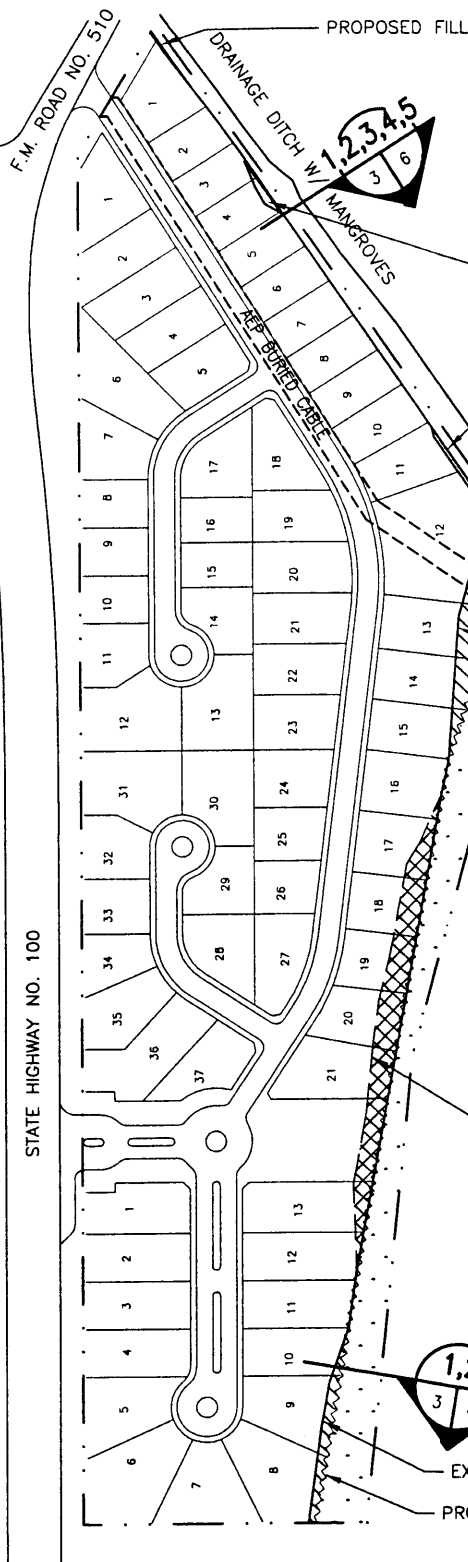
NOTES:

1. WETLAND LINE (2001) VERIFIED BY JOHN WONG (USACE).
2. WETLAND LINE IS IDENTICAL TO EXISTING BULKHEAD ALIGNMENT EXCEPT IN AREA NEAR PROPOSED WEST LOTS 17-21 & EAST LOT 13 WHERE THE PREVIOUS OWNER INSTALLED A BULKHEAD SLIGHTLY BAYWARD OF WETLAND LINE. NO ADDITIONAL FILL IS PROPOSED AT THIS LOCATION.
3. DITCH STABILIZATION FILL DETAILS ARE PROVIDED ON SHEET 4.
4. DURING CONSTRUCTION OF THE RETAINING WALLS SILT SCREEN, HAY BALES OR OTHER APPROPRIATE BMPs WILL BE UTILIZED TO AVOID IMPACTS TO ADJACENT WETLANDS AND WATERS.
5. ONCE THE RETAINING WALLS HAVE BEEN CONSTRUCTED, THE ACTUAL STRUCTURE ITSELF WILL ACT AS A BARRIER TO PRECLUDE FILL MATERIAL FROM PASSING BEYOND THIS POINT.

LEGEND

- EXISTING BULKHEAD
- - - EXISTING WETLAND LINE (2001)
- ~~~~~ PROPOSED RETAINING WALL
- . - . - PROPERTY BOUNDARY
- [Pattern] PROPOSED DITCH STABILIZATION FILL (0.05 AC.)
- [Pattern] PROPOSED FILL IN FRONT OF EXISTING BULKHEAD (0.37 AC.)
- [Pattern] FILL BEHIND EXISTING BULKHEAD (0.49 AC.)
- [Pattern] AVOIDED WETLANDS (3.3 AC.)
- [Symbol] PROPOSED BIRD OBSERVATION PLATFORM

STATE HIGHWAY NO. 100



PROPOSED PLAN VIEW

SCALE: 1"=300'



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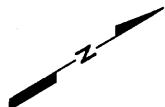
DATE: 10/14/03

DATUM: NGVD'29

CAMERON COUNTY

SMA Job No: 200.20053 SHEET 3 of 9

COE# 23330



F.M. ROAD NO. 510

PROPOSED FILL (0.004 AC.)

NOTES:

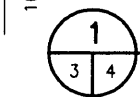
1. EXCEPT IN AREAS NOTED, ALL DITCH STABILIZATION WILL OCCUR IN UPLANDS AND NOT AFFECT WETLANDS.
2. BMPs WILL BE IMPLEMENTED AND MAINTAINED THROUGHOUT CONSTRUCTION. SEE NOTES 4 AND 5 ON SHEET 3 FOR DETAILS.

LEGEND

- — — — — PROPERTY BOUNDARY
- ~~~~~ PROPOSED RETAINING WALL
- ▭ PROPOSED DITCH STABILIZATION FILL (TOTAL 0.05 AC.)
- - - - - UPLAND/WETLAND BOUNDARY (2003) ALONG BOTH SIDES OF DITCH, DETERMINED BY JOHN WONG (USACE)

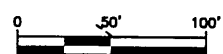
PROPOSED FILL (0.017 AC.)

PROPOSED FILL (0.034 AC.)



PROPOSED DITCH PLAN VIEW

SCALE: 1"=100'



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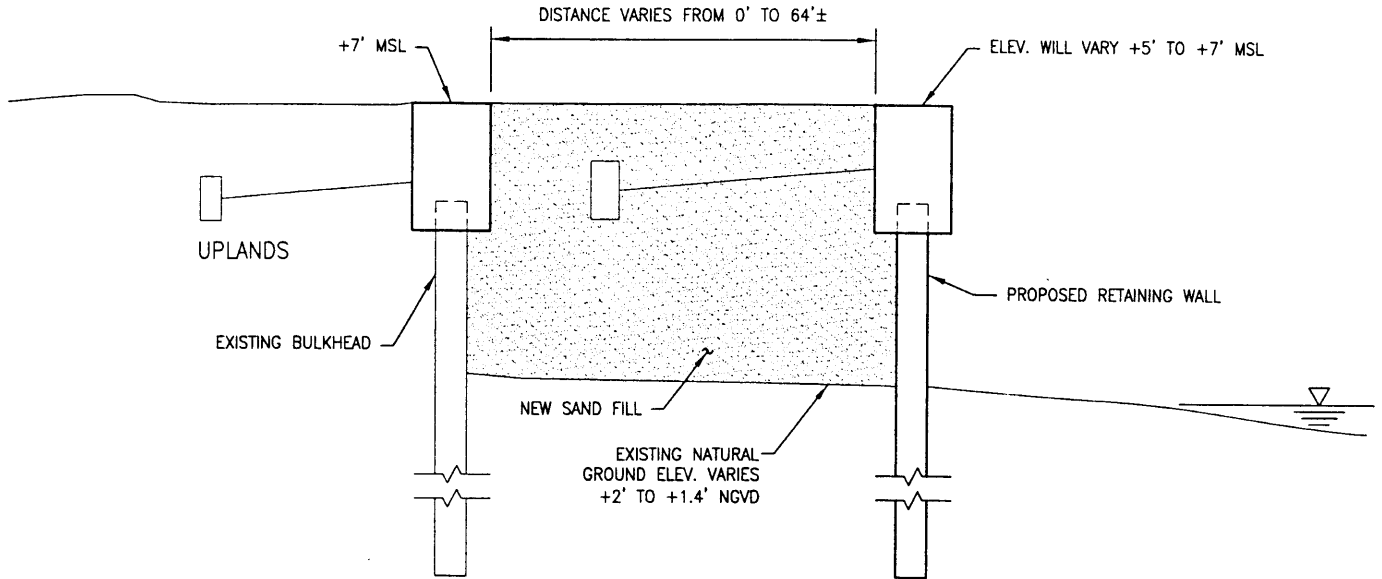
CAMERON COUNTY

SMA Job No: 200.20053 SHEET 4 of 9

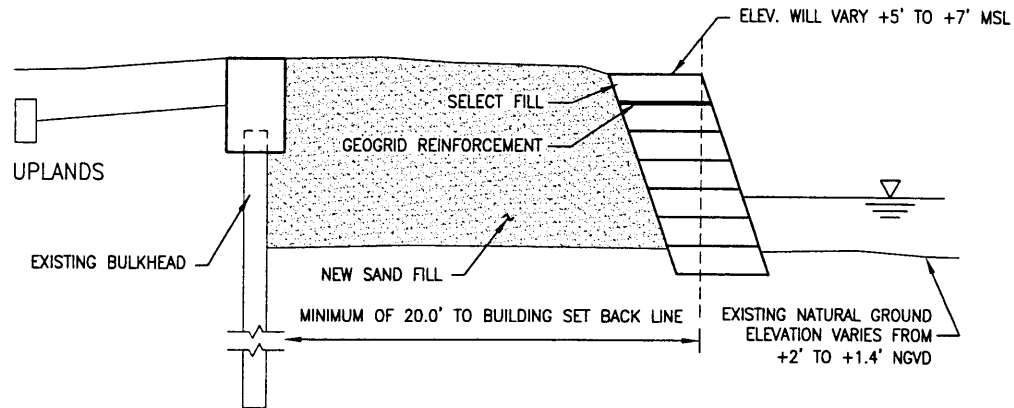
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LOG # 23330

PROPOSED SHORELINE STABILIZATION METHODS



1 TYPICAL RETAINING WALL SECTION
SCALE: N.T.S.



2 ALTERNATE RETAINING WALL SECTION
SCALE: N.T.S.

NOTES:

1. EXISTING BULKHEAD MAY BE REMOVED
2. FOR SHORTER DISTANCES ALTERNATIVE ANCHORAGE METHODS MAY BE USED.
3. CAP & WALE SYSTEM WILL VARY.

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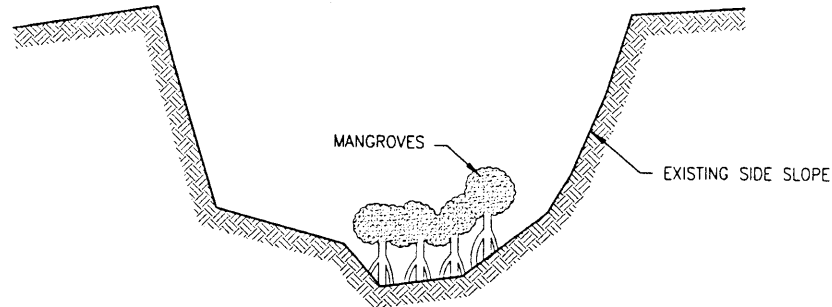
SHINER MOSELEY AND ASSOCIATES, INC.
ENGINEERS & CONSULTANTS

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SMA Job No: 200.20053 SHEET 5 of 7

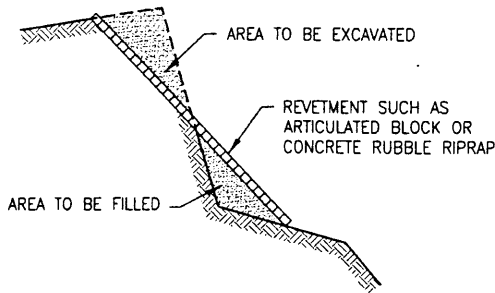
C06 # 23330

PROPOSED DITCH SECTION AND STABILIZATION METHODS

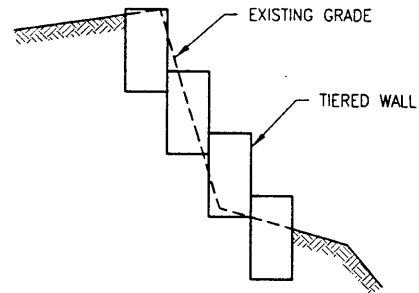


1 EXISTING TYPICAL DITCH SECTION
SCALE: N.T.S.

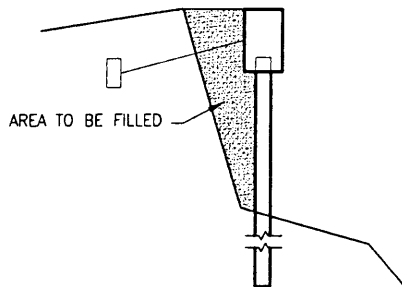
PROPOSED SLOPE STABILIZATION METHODS



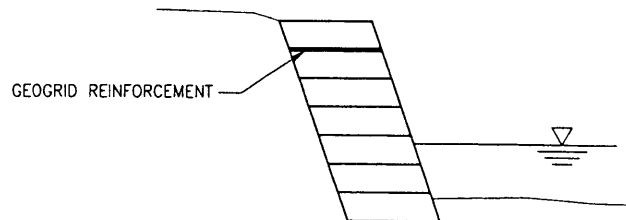
2 PROPOSED SLOPED REVETMENT
SCALE: N.T.S.



3 ALTERNATE TIERED WALL
SCALE: N.T.S.



4 ALTERNATE RETAINING WALL
SCALE: N.T.S.



5 ALTERNATE RETAINING WALL
SCALE: N.T.S.

NOTES:

1. MANGROVES IN DITCH CHANNEL WILL NOT BE DISTURBED DURING CONSTRUCTION.
2. CROSS SECTIONS ARE APPROXIMATE AND WILL VARY ALONG THE LENGTH OF THE DITCH.
3. ONE OR A COMBINATION OF THE PROPOSED SECTIONS WILL BE USED.

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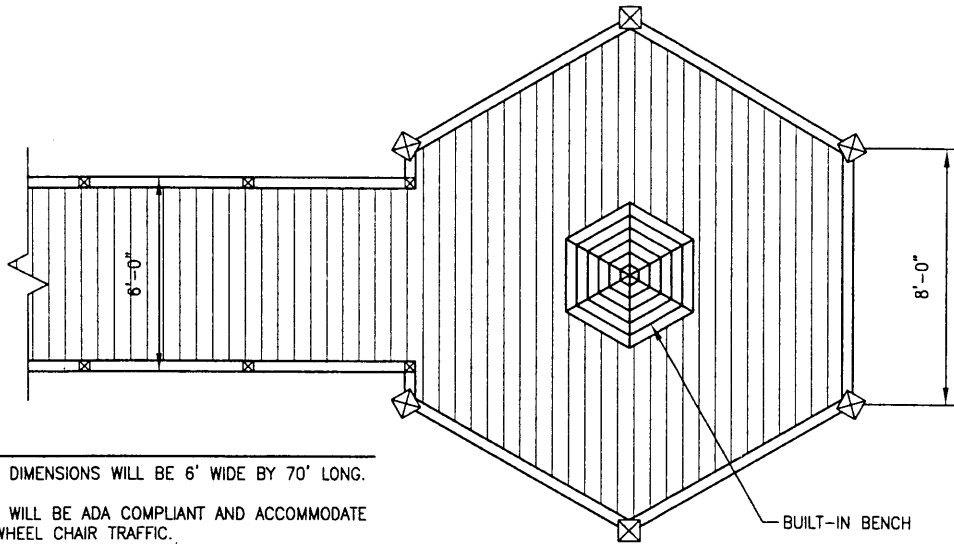


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COE# 23330



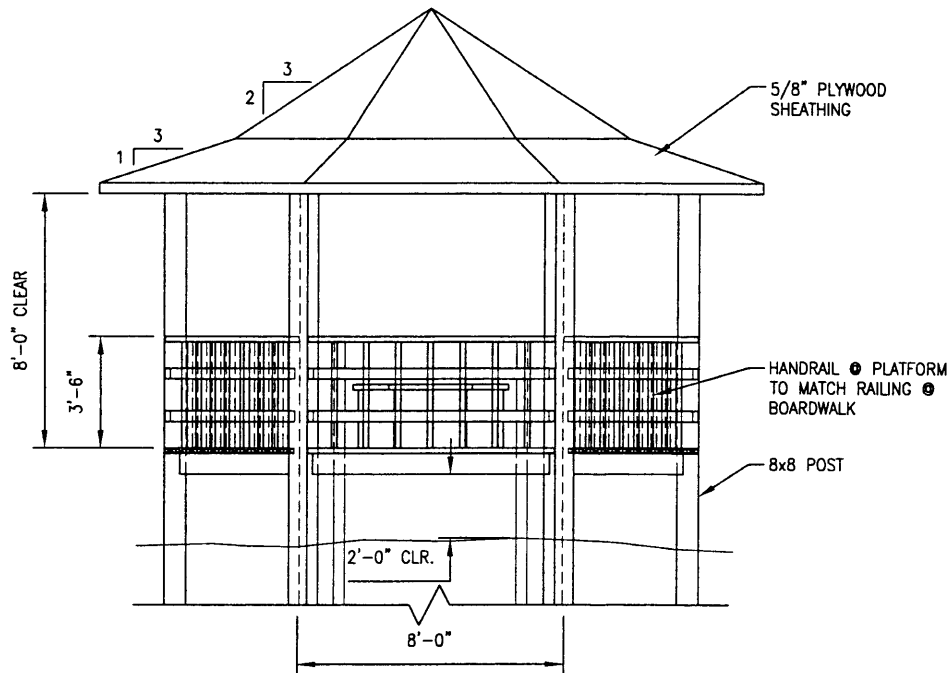
NOTES:

1. BOARDWALK DIMENSIONS WILL BE 6' WIDE BY 70' LONG.
2. BOARDWALK WILL BE ADA COMPLIANT AND ACCOMMODATE TWO-WAY WHEEL CHAIR TRAFFIC.



PLAN-PROPOSED WILDLIFE/BIRD OBSERVATION PLATFORM

SCALE: N.T.S.



ELEVATION-PROPOSED WILDLIFE/BIRD OBSERVATION PLATFORM

SCALE: N.T.S.

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COE # 23330

MITIGATION PLAN

LAGUNA DEVELOPMENT GROUP, LTD USACE APPLICATION # 23330

Laguna Development Group (LDG) proposes to provide compensatory mitigation for the loss of waters of the U.S. resulting from the construction of two proposed retaining walls. Total impacts to waters of the U.S. include approximately 0.91 acres of unvegetated sand flat and sparsely vegetated areas. No seagrasses would be affected.

The proposed shoreline retaining wall would measure approximately 1,550 ft in total length and would extend approximately 0 ft to 64 ft seaward of an existing sheet-pile bulkhead, depending on the cross-section. The construction of this shoreline retaining wall would involve the filling of a narrow, irregularly shaped strip of wetlands behind the wall measuring approximately 0.86 acres. These wetlands will consist of mostly unvegetated sand flats adjacent to the Laguna Madre.

The construction of a drainage-way retaining wall (with two parallel faces) along the upland portions of the drainage ditch at the west end of the project site would also involve filling several small, irregularly shaped "erosion pockets". These "erosion pockets" would collectively constitute approximately 0.05 acres of wetlands.

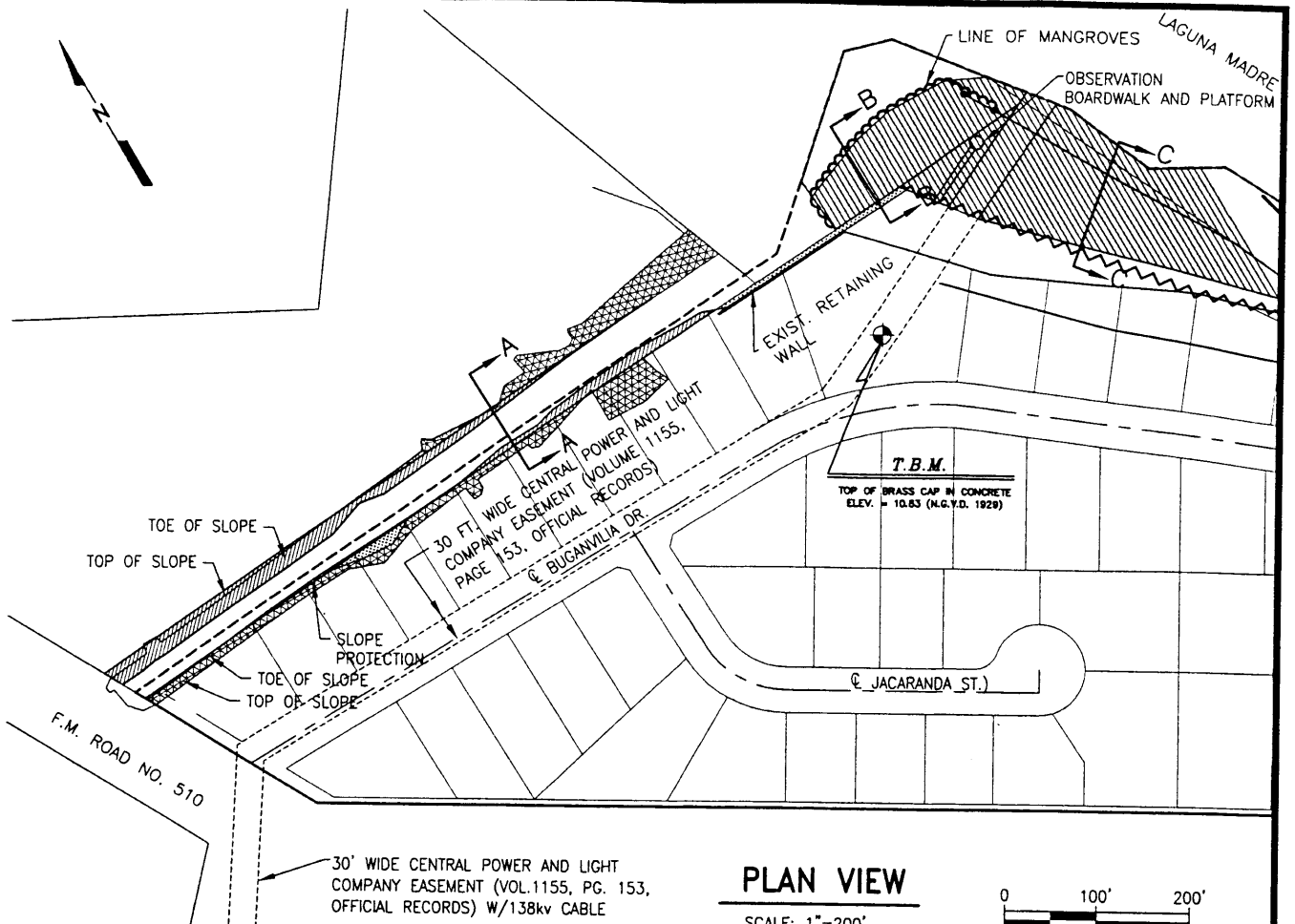
The proposed mitigation includes the following:

- Existing Ditch: Place the existing ditch under a conservation easement to protect the existing mangroves (0.55 Ac);
- Along the ditch near the proposed observation platform: Provide a 25 ft x 200 ft strip of mangroves (0.15 Ac), excavate behind the mangroves (0.28 Ac) to an elevation conducive to seagrass colonization, and provide circulation channels;
- In front of the proposed retaining wall: Excavate an area to an elevation conducive to seagrass colonization (1.0 Ac).

The total on-site mitigation area to be proposed is ~ 1.98 Ac.

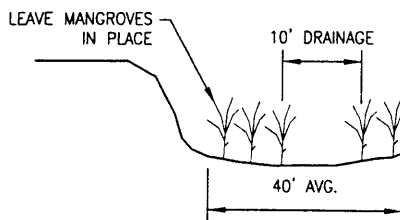
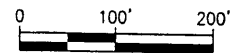
It is anticipated that seagrasses will colonize at the project site once conditions are made suitable. Monitoring efforts will be performed one year later to determine percent vegetative cover. If, after one year, the affected area has not achieved at least 50% vegetative coverage, the permittee will plant and monitor the area based on an acceptable plan to be approved by the USACE and GLO.

COE # 23330
CAMERON Co., TX
SHEET 8 of 9



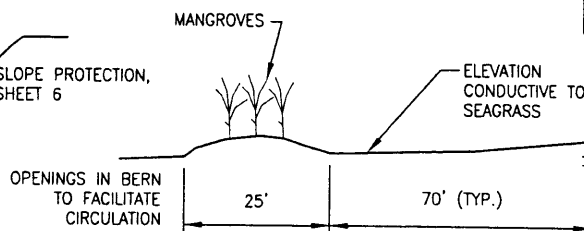
PLAN VIEW

SCALE: 1"=200'



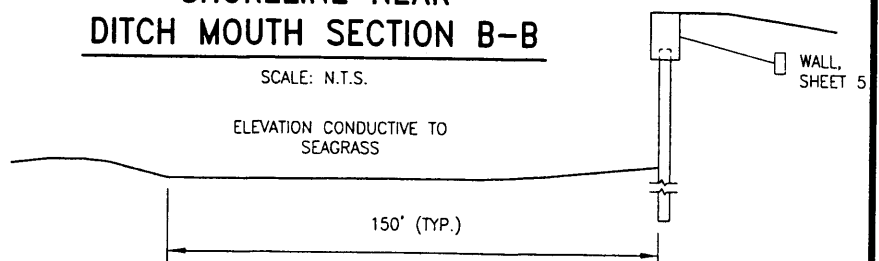
TYPICAL DITCH SECTION A-A

SCALE: N.T.S.



SHORELINE NEAR DITCH MOUTH SECTION B-B

SCALE: N.T.S.



TYPICAL BAY FRONT SECTION C-C

SCALE: N.T.S.

NOTE: MAY VARY OVER CP&L EASEMENT TO AVOID ANY IMPACT ON BURIED CABLE.

LEGEND

- PROPOSED HABITAT EASEMENT
- PROPOSED WETLAND CREATION
- PROPOSED UPLAND FILL
- PROPOSED WETLAND FILL



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SMA JOB NO.: JOB NO. 200.20053

LAGUNA DEVELOPMENT GROUP, LTD.

PROPOSED MITIGATION

CAMERON COUNTY

EXHIBIT #1

COE # 23330
SHEET 9 OF 9